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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/182,626	10/29/1998	DAVID E. WANG	QCPA471	2210

23696 7590 12/03/2002

Qualcomm Incorporated  
Patents Department  
5775 Morehouse Drive  
San Diego, CA 92121-1714

EXAMINER

NGUYEN, FRANCIS N

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 12/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/182,626

Applicant(s)

WANG ET AL.

Examiner

FRANCIS NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 9-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 15-56 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-13 is/are rejected.
- 7) ☐ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-13 are rejected under 35 U.S.C. 112 because it depends on canceled claim 8.

Therefore, no art rejection is provided for those claims.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanatani et al. ( US Patent in view of Jacobsen et al. ( US Patent 6,073,034).

As to claim 1, Kanatani et al. teaches a system ( **source driver and gate driver for TFT liquid crystal panel 100 as shown in figure 1**) for providing a first signal ( scanning pulse, column 1, lines 51-53 ) to a circuit ( circuitry of each display pixel, shown in figure 1 as part of a plurality of display pixels that make up TFT LCD panel 100) and receiving a second signal ( analog signal, column 8, lines 29-32), said signal located on signal electrode portion of said circuitry )

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from said circuit over an electrical connection ( intersection of scanning electrode and signal electrode to make up a display pixel as shown in figure 1) , said system comprising:

first means for providing said first signal (gate driver 300 as shown in figure 1 ) to said circuit via a first electrical path ( **scanning electrode located at a display pixel shown in figure 1** ), said signal having alternating first and second states ( scanning pulse to scanning electrode in sequence, column 1, lines 51-53, output of gate driver as shown in figure 16 , **scanning pulse as shown in figure 19a**);

second means for generating a second signal ( source driver generating analog signal on signal electrode as shown in figure 1);

third means for receiving said second signal via said first electrical path, said second signal being received during said second state of said first signal ( TFT at intersection of scanning electrode and signal electrode, serving as switch as shown in figure 1)

However, Kanatani et al. fails to teach a keypad. Jacobsen et al. teaches a microdisplay system with active matrix liquid crystal display, and a keyboard or touchpad ( column 2, lines 36-37).

**It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the apparatus taught by Kanatani et al., then modify its housing to provide a keypad as taught by Jacobsen et al. in order to obtain the apparatus Kanatani et al. modified by Jacobsen et al., because it would allow an operator to input alphanumeric data onto said keypad for remote communication purpose.**

As to claim 2, the system of claim 1 ( see same citation for claim 1) wherein said first and second states are continuously alternating states ( see Kanatani et al, **scanning signal with +12V and -12V** as shown in figure 19a, column 15, line 65 through column 16, line 3).

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As to claim 3, the system of claim 1 ( see same citation for claim 1) wherein said first signal provides power to said circuit (see Kanatani et al., voltage applied to selected pixel electrode as shown in figure 17a) when said first signal is in said first state ( **state +12V as shown in figure 19a**).

As to claim 4, the system of claim 1 ( see same citation for claim 1) wherein said first means further includes means for adjusting a duty cycle and/or frequency of said first signal (see Kanatani et al., **control circuit 4 as shown in figure 1, column 10, lines 7-9, inverse of frequency of square wave shown in figure 18**).

As to claim 5, the system of claim 4 ( see same citation for claim 4), wherein said first means includes a signal generator ( see Kanatani et al., **counter electrode drive circuit 8 generating a square wave**, column 14, lines 62-67).

As to claim 6, the system of claim 5 ( see same citation for claim 5) wherein said signal generator includes a voltage source( **power source Vbb and Vdd**, column 14, lines 62-67), a switching circuit connected to said source and a control circuit connected to said switching circuit( **transistors as part of 501 and 502 devices** shown in figure 16, said control circuit effective to cause said switching circuit to output said first signal having first and second states at said duty cycle( control circuit 4 providing timing signals as scan clock pulse and scan start pulse shown in figure 16).

As to claim 14, the system of claim 1 ( see the same citation for claim 1) further including means for processing the second signal ( **supplemental capacitance Cs as shown in figure 12**).

*Allowable Subject Matter*

3. Claims 15-56 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 15-22, 56, none of prior art teaches a system and associated method for providing input from a keypad and providing lighting to said keypad over an electrical connection comprising multiplexing means for selectively activating said lighting means and said key detection means at a predetermined rate.

As to claims 23-30, none of prior art teaches a system for providing bi-directional information over a single connection between a keypad and a signal processing circuit comprising second means for transferring a first signal from said computer to said keypad over said connection in response to said high voltage state on said connection, third means for transferring a second signal from said keypad to said circuit over said connection in response to said low voltage state on said connection.

As to claims 31-38, none of prior art teaches a mobile communications device including an integrated personal digital assistant and cellular telephone comprising a first means for providing a first function and a second function between said second means and said third means via said

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fourth means so that said first function and said second function appear to a user to be implemented simultaneously.

As to claims 39-55, none of prior art teaches a personal digital assistant comprising a pin contact between a flip and body for providing an electrical connection between said flip and said body when said flip is closed and multiplexer circuit for selectively providing said first input signal from said keypad to said body and providing a second signal from said body to said keypad via said electrical connection.

4. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 7, none of prior art teaches a system for providing a first signal to a circuit and receiving a second signal from said circuit over an electrical connection, wherein said first means includes a signal generator which further comprising a switching circuit comprising a transistor having control terminal connected to said control circuit, one terminal connected to said source and one terminal connected to said electrical path.

### CONCLUSION

5. The prior art made of record is not cited upon but pertinent to Applicant's disclosure.

US Patent	Griffith et al.	6,128,514
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US Patent	Doran	5,918,188
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Reference Griffith et al. is made of record as it discloses a portable radiotelephone using a turbodial button operable when pressed to selectively produce a first condition and a second condition.

Reference Doran is made of record as it discloses a flip on/off detector which indicates whether the cover member is in the open position or the closed position.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **FRANCIS N NGUYEN** whose telephone number is **703 308-8858**. The examiner can normally be reached during hours 8:00 AM- 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD A HJERPE** can be reached at 703 305-4579.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 ( for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor ( Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service whose telephone number is (703) 306-0377.



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A handwritten signature in black ink, appearing to read 'Francis N. Nguyen', written in a cursive style.

November 18th, 2002

FRANCIS N NGUYEN

Examiner

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### EXAMINER'S AMENDMENT

Authorization for this examiner's amendment was given in a telephone interview with  
Mr. George Pappas ( Applicant's representative ) on 4/17/02 and 9/03/02.

#### IN THE CLAIMS:

Claim 1, Amendment A, page 2, at end of sentence add phrase

B-1 "wherein said circuit includes at least one light source for illuminating said keypad".

Cancel claim 9 ( Amendment A , page 5).

Claim 10, Amendment A, page 5, replace "9" with "1".

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **FRANCIS N NGUYEN** whose telephone number is **703 308-8858**. The examiner can normally be reached during hours 8:00 AM- 4:30 PM.

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A handwritten signature in black ink, appearing to read 'Francis N. Nguyen', with a long horizontal flourish extending to the right.

FRANCIS N NGUYEN  
Examiner  
Art Unit 2674

FN  
9/03/2002